



R10:

E-Commerce and Facilities Management

A/E/C SYSTEMS 2000

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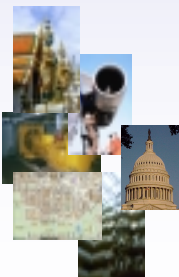
jwhite@graphsys.com





Agenda

- Introduction and Background
- Furniture
- Energy
- E-Commerce and the Facility Manager

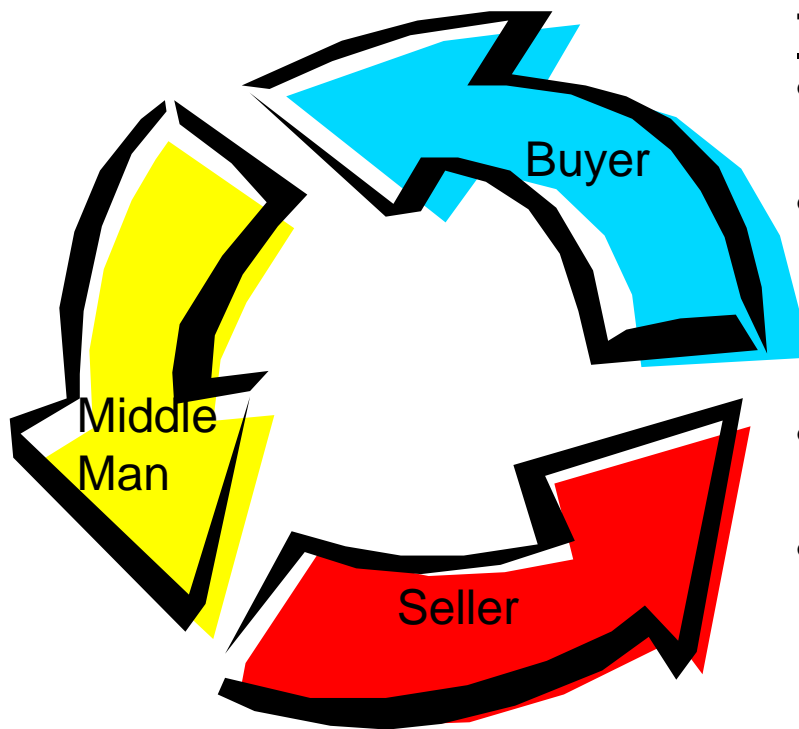




What is E-Commerce

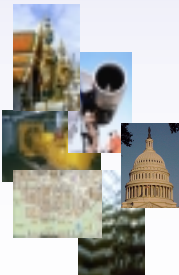
Electronic Commerce

The buying and selling of products and services by businesses and consumers over the Internet. Typically there are three types of e-commerce transactions: business to business, business to consumer, and consumer to consumer.



Traditional Commerce

- Buyer seeks products or services
- Middleman provides information, does the leg work; usually little incentive to seek buyers best interest
- Seller provides products or services
- Pays middleman percentage of inflated costs



The diagram illustrates the Traditional Business Process as a sequence of five interconnected blocks. Each block is a rectangle with a black border, and they are connected by a black line that zig-zags between the top and bottom of each block. Blue 'x' marks are placed at the top and bottom of each block. The blocks are arranged horizontally from left to right.

In-House
Core
Compe-
tencies

Rigid
Infrastruc-
ture
Processes

Products
and
Services

Channels

Customers

Traditional Business Process

The diagram illustrates the E-Business Design as a sequence of five interconnected blocks. Each block is a rectangle with a black border, and they are connected by a black line that zig-zags between the top and bottom of each block. Blue 'x' marks are placed at the top and bottom of each block. The blocks are arranged horizontally from left to right.

Customers
Needs

Integrated
Channels

Products
and
Services

Flexible
Infra-
structure
Processes

Outsourced
In-House
Core
Competencies

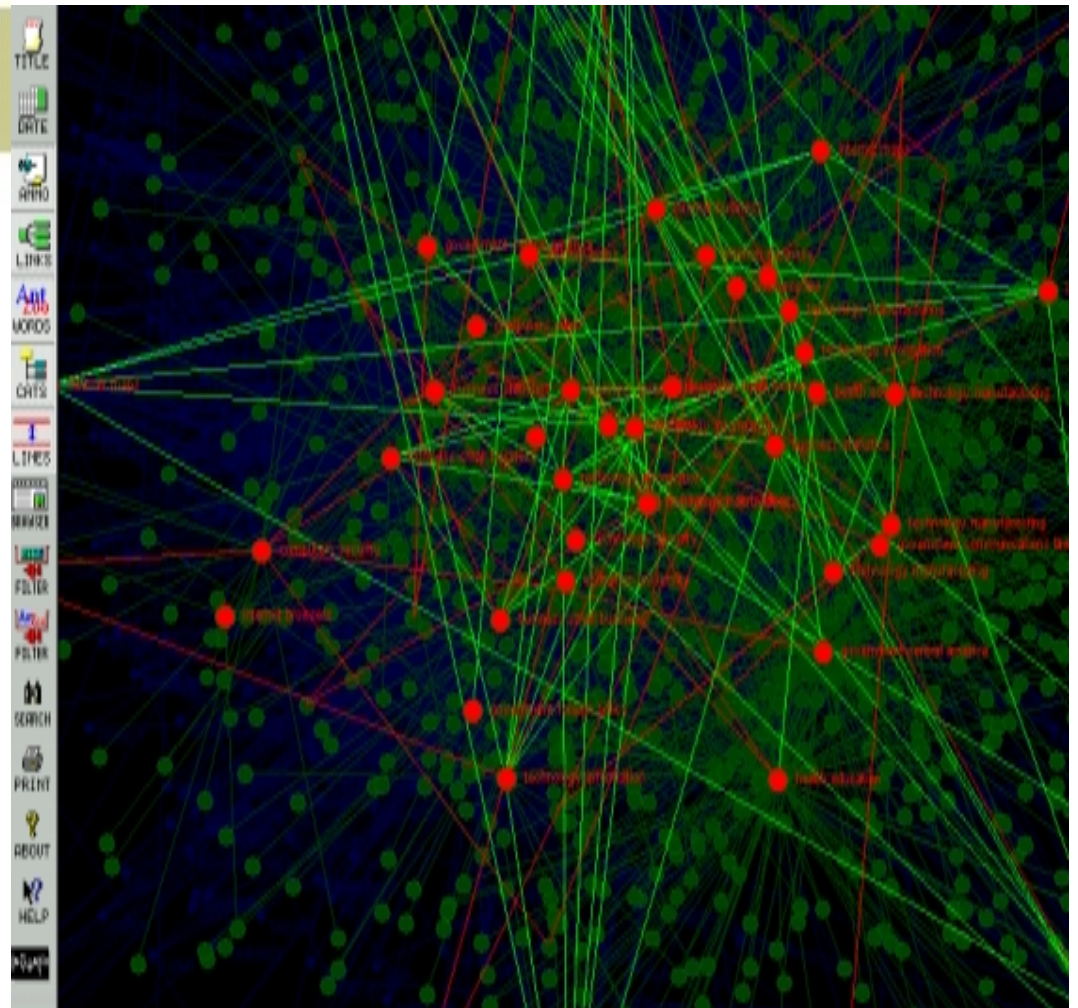
E-Business Design



E-Commerce Success: Retail or Site Metrics

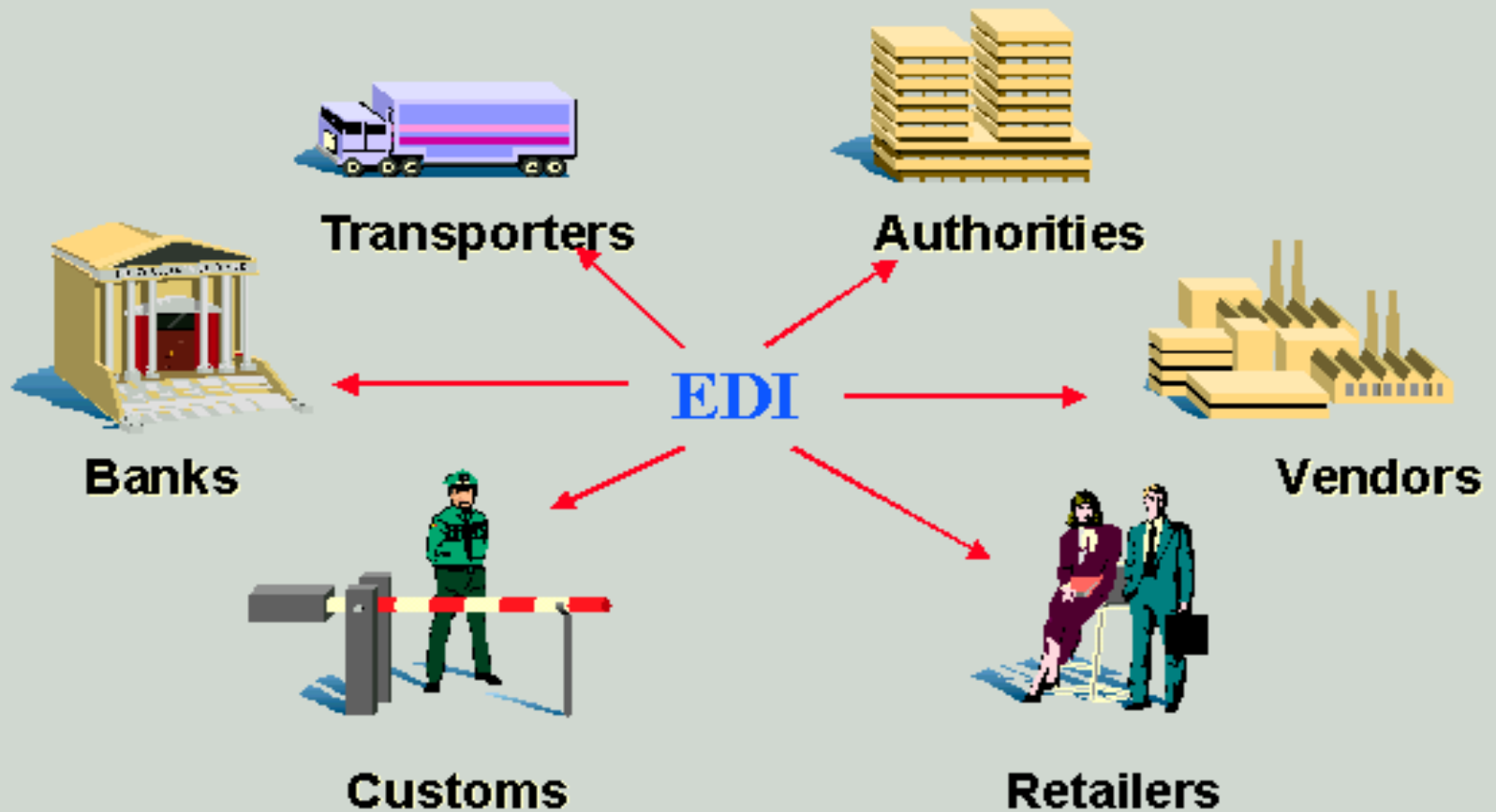
General activity statistics

Number of hits	8,898,314
Number of requests	3,196,770
Number of visits	160,016
Average requests per visit	19.98
Average visit duration	00:06:01





Electronic Data Interchange (point-to-point) vs. Internet





Portal Exchanges

Delphi Group projects corporate portal software market at \$740 million in 2001

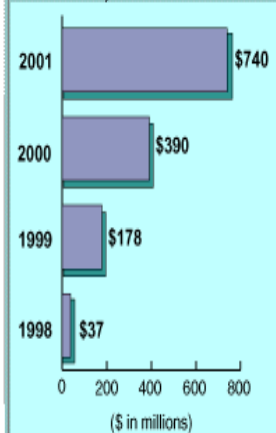
More than half of companies surveyed already have portal projects under development

During 1999, the number of software products targeting the emerging market for corporate portals has exploded, with offerings currently available from over four dozen vendors. According to research by The Delphi Group, these software offerings will represent a market of \$178 million by the end of 1999. Projecting ahead, Delphi forecasts compound annual growth in excess of 100% through 2001, to a total of \$740 million.

"Over the next two years corporate portal sites will rapidly become the interface of choice for professionals to interact with previously disparate corporate information and processes, with the Internet, and with extranet partners, customers, and suppliers," explains Hadley Reynolds, director of Research at the Boston-based firm. "Portal development is a necessary stage both in the maturing of corporate intranets and increasingly in the development of business-to-business commercial networks..

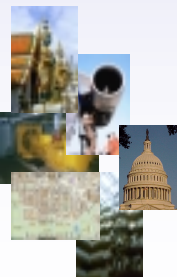
Corporate Portal Software Market, 1998-2001

Over the next two years, portals will become the interface of choice for corporate professionals who need to interact with disparate resources and information systems.



Source: The Delphi Group (www.delphigroup.com); Copyright 1999

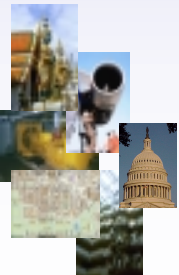
- Portal Software
- ASP Model
- Portal as B-B link with service providers, suppliers, customers
- Portal Offerings
 - Applications (single point of access for multi-source integration)
 - Tools (search engines, visualization interfaces, ..)
 - Application Portals (FM)





Application Service Providers (ASPs)

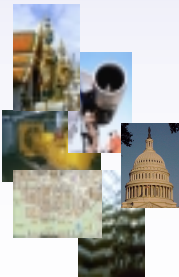
- Renting computer applications stored in a remote data center and having them delivered over the Internet --- reducing the time, cost and frustration associated with using software





ASP Technology

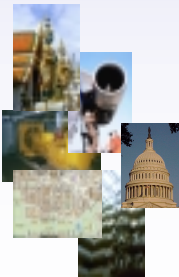
- Network Management Software
- Infrastructure Software
- Implementation Services
- Ongoing Management and Support Services





Impediments to E-Commerce

- Antitrust
- Privacy (personal, financial information)
- Integration to legacy systems
- Cultural difficulties





Future of E-Commerce

- Shift of power to the consumer will lead to fundamental changes in facility management
- Choiceboards





Choiceboard Players

1. Individual manufacturers
2. Consortium (portal exchange)
3. New intermediary





Furniture Case Study

Internet commerce for the B-2-B office furniture industry will be a major source of revenue

The successful site will provide business customers with the product information and selection, expert advice and integrated delivery and installation.

Customer Service assisted sales yield over 90% close rate.





Content

**Workstation Comparison
Engine**

Room Layout Technology

Dealer Partnerships

Installer Partnerships

**Distribution Partnerships
(MRO)**

**Manufacturer
Partnerships**

**Information provider
Partnerships**

**Furniture Inventory
support (CAFM)**

**Move management
support**

Commerce

**Manufacturer Fixed
Price**

**Variable Regional
Dealer Price**

Collective Buying

**Auctions (asset
disposal)**

Community

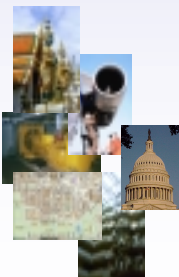
**Office Design Tips
from industry
professionals**

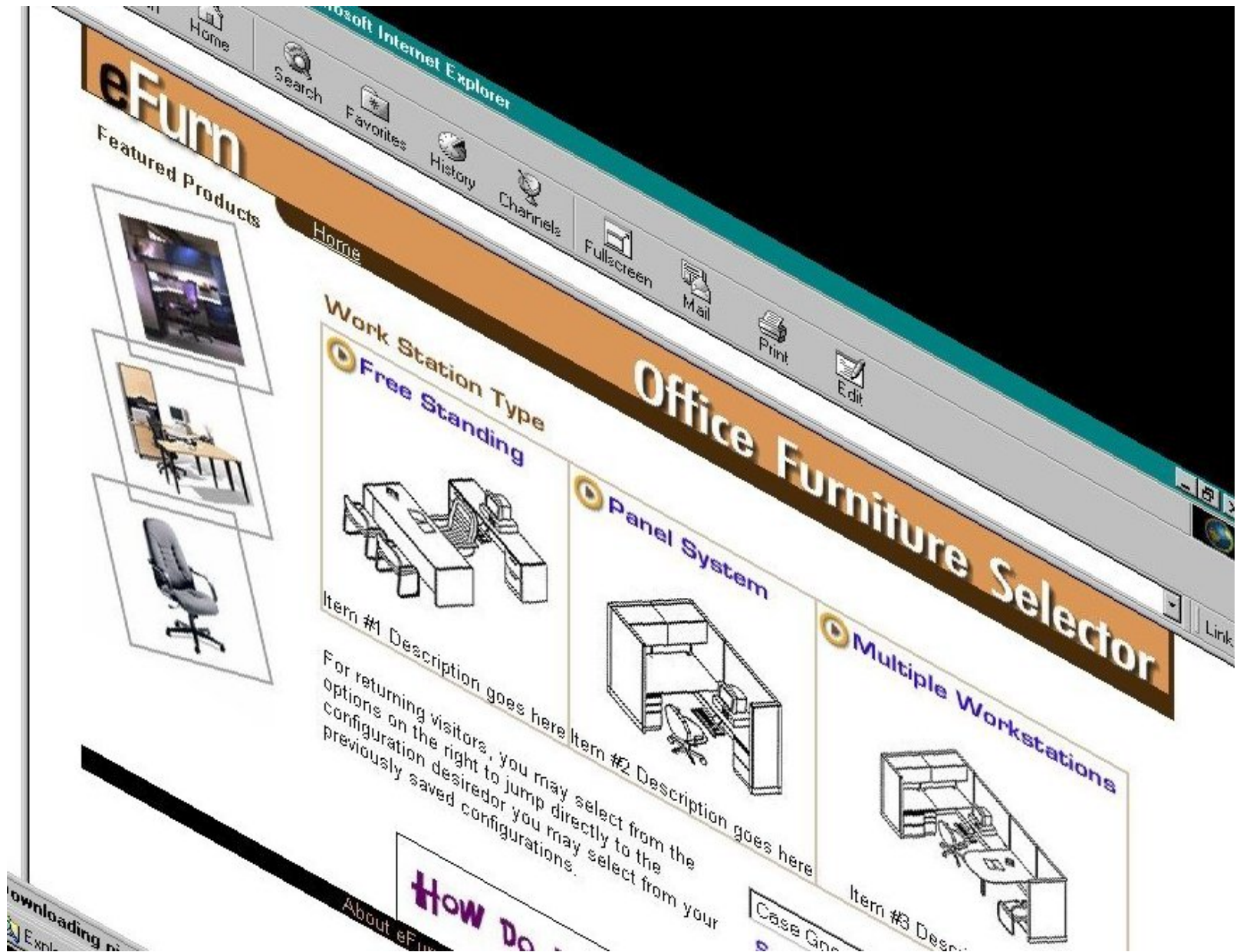
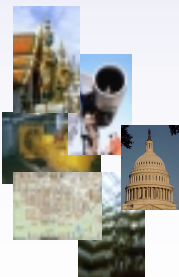
**Discussion Groups &
Forums**

Branded E-mail

Product Reviews

**B-2-B Furniture Choiceboard -
Life cycle of furniture as an asset.**





[Home Page](#)[Try New Demo](#)[Configure New Workstation](#)[? Help](#)

OFFICE FURNITURE SELECTOR

Current eFurn user: Al Hart

Select Additional Options:

- Click **Options** to see details of dropdown choices.
- Click the **i** icon for more information about the current selection.

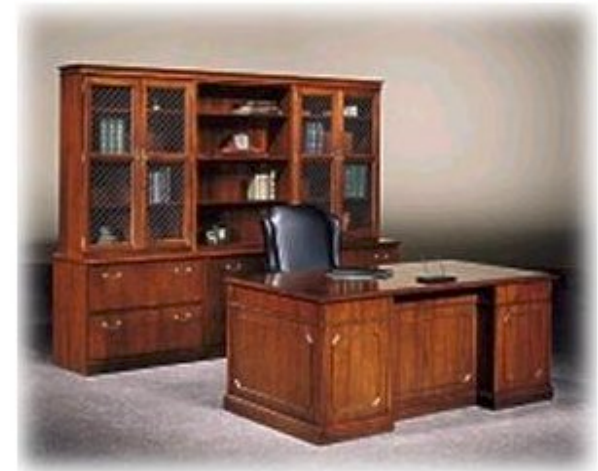
CONTINUE

		Color Judicial on Walnut	Options
		Desk Size 66 " Width	Options
		Credenza/Highback Organizer Credenza Only	Options
		Lateral Storage 2-Drawer	Options
		Bookcase 2-Drawer Lateral	Options

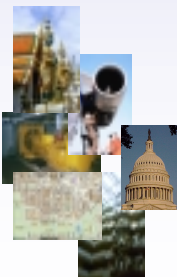
CONTINUE

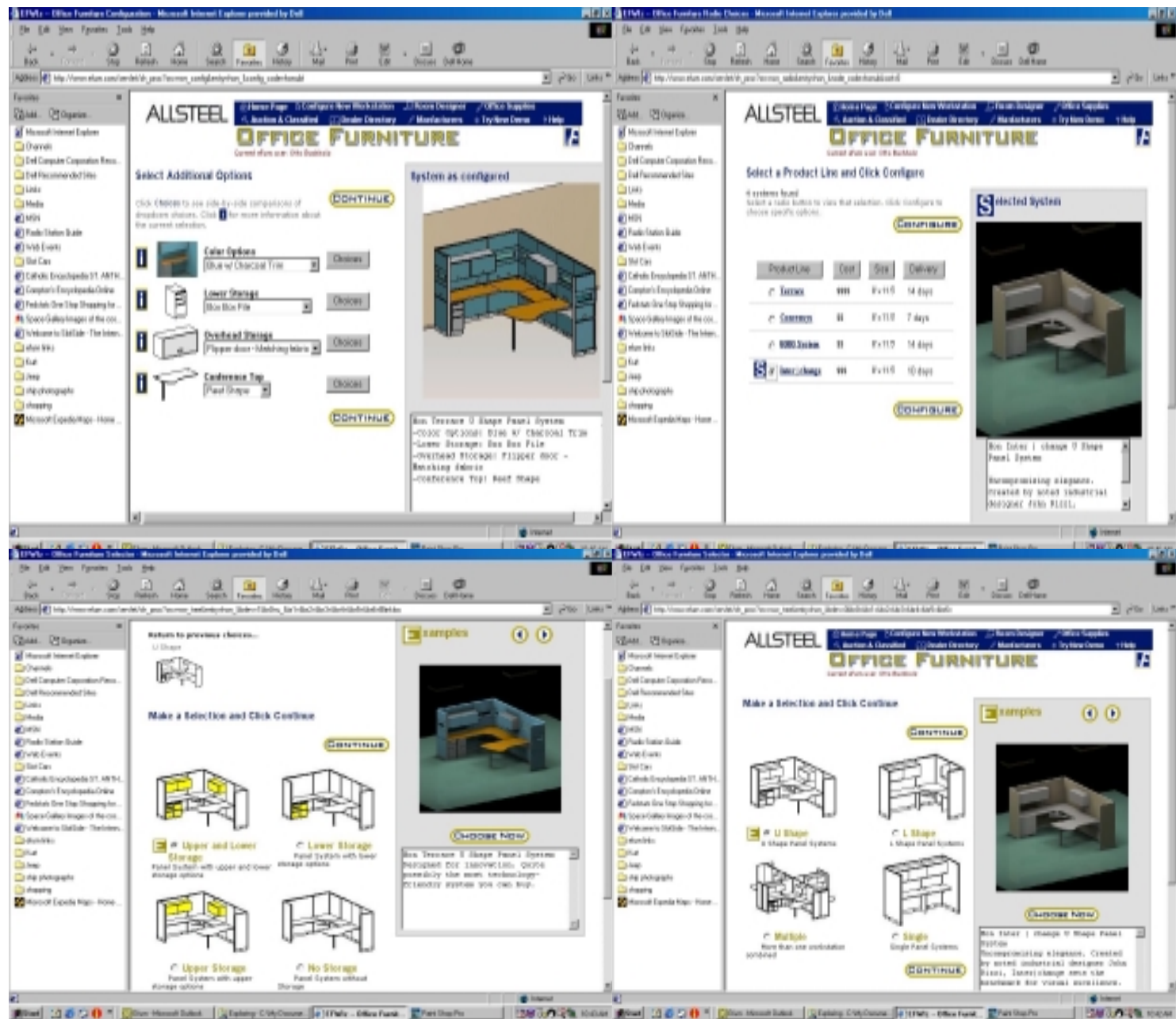
System as configured:

14' X 12', moderate (1-21 day) delivery.



This image will be replaced with a rendered version of the current selections after the product is complete.





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FM



EFURN.COM



☐



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OFFICE ROOM DESIGNER

[Auction & Classified](#) [Dealer Directory](#) [Manufacturers](#) [Try New Demo](#) [Help](#)

Length

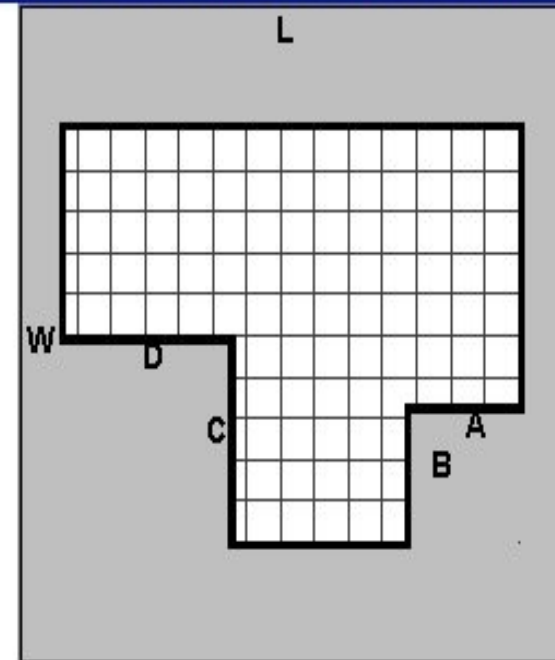
Width

A

B

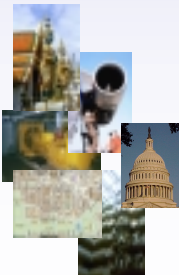
C

D



Rotate

Next->





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OFFICE ROOM DESIGNER

[Auction & Classified](#) [Dealer Directory](#) [Manufacturers](#) [Try New Demo](#) [Help](#)



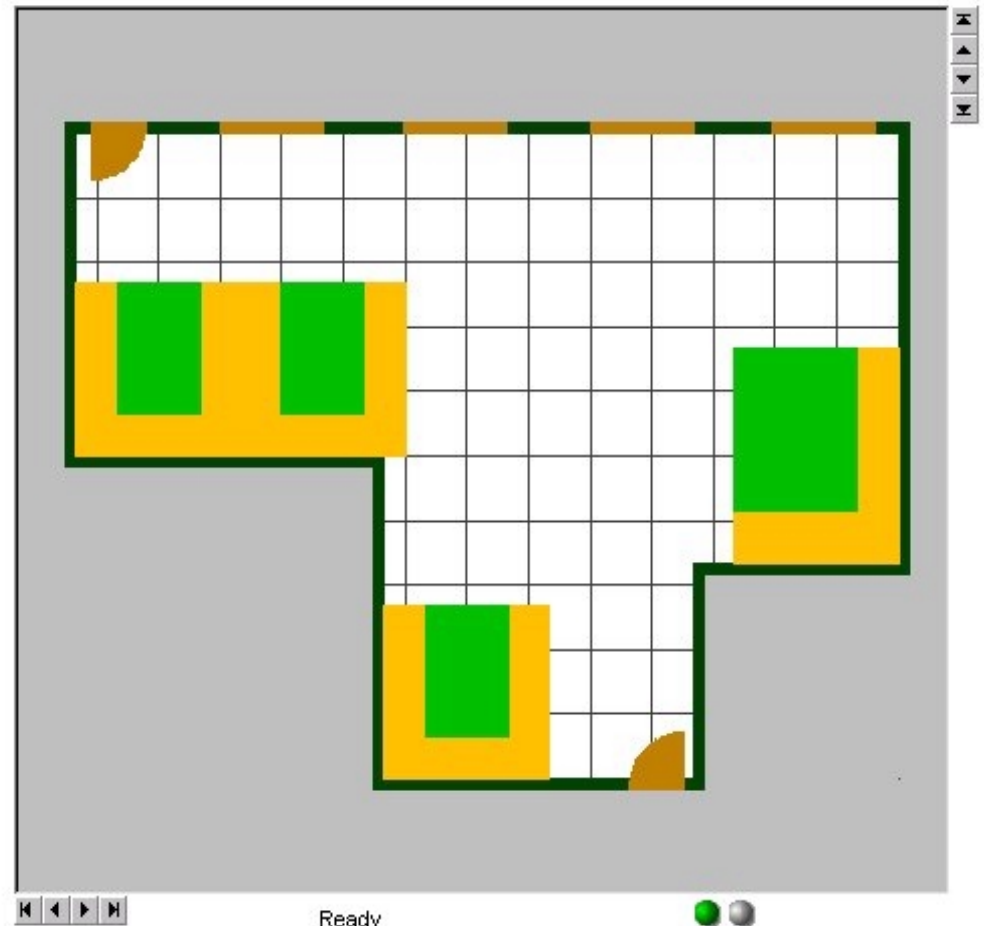
Place Workstation

Workstation name

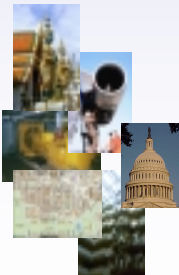
Workstation size

8' x 8'

Rotate



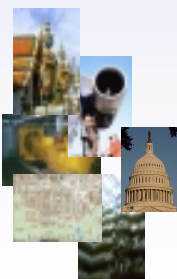
Ready



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No.	Mfgr	Partno	Description	Price	Extended
1	HON	MD2F30	Mobile-2 File 30D	750.00	750.00
1	HON	PBF1842	Fabric Panel 18W 42H	120.00	120.00
2	HON	PBF3642	Fabric Panel 36W 42H	100.00	200.00
3	HON	PBF4242	Fabric Panel 42W 42H	100.00	300.00
2	HON	WS3630	Worksurface 36W 30D	250.00	500.00
1	HON	WS4230	Worksurface 42W 30D	289.00	289.00
1	HON	WSCK4230	Corner Worksurface w/keyboard 42W 30D	500.00	500.00
				Total: 2659.00	

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OFFICE FURNITURE SELECTOR

Current eFurn user: Al Hart

Contact Local Dealer

within a radius of miles
of ZIP Code

Click (🔍) to receive more information

Have a sales representative contact me.



Crane Office Interiors

Highlands Ranch, Colorado 80121-1312

phone:

fax:

www.craneoffice.com



Indoff Office Interiors

Littleton, Colorado 80122

phone:

fax:

www.ioi-usa.com

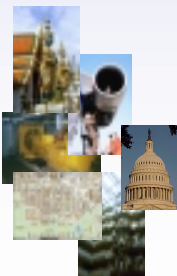


System as configured



This image will be replaced with a rendered version of the current selections after the product is complete.

Other options will allow for

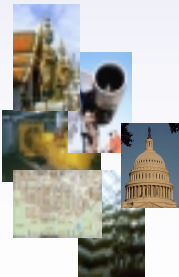




Evolving Role of the Dealer:

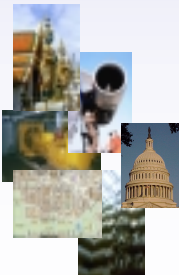
Bricks and Mortar vs. Internet or Clicks and Mortar

- Determine correct product for project
- Provide quotation
- Guide in customer selection of product
- Comparisons
- Specifications
- Product availability and order tracking
- Installation
- Administration of the sale





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Graphic Systems, Inc.
jwhite@graphsyst.com



Other Horizons for E-Commerce



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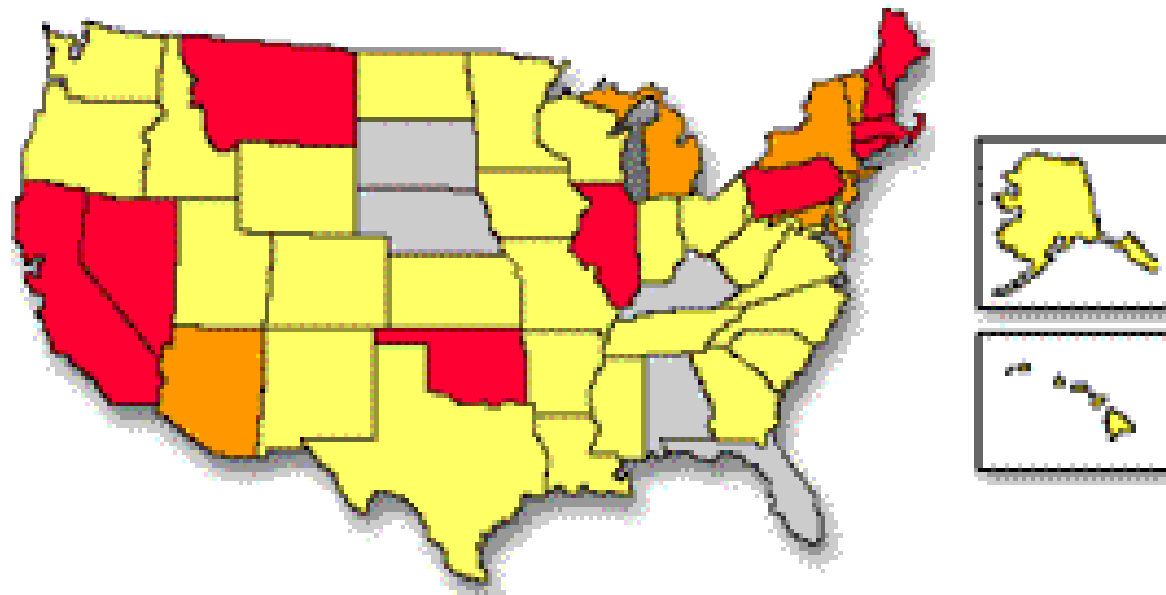
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Status of Deregulation

Electricity Deregulation status at a glance:



- no significant activity
- commission or legislative investigation ongoing
- comprehensive regulatory order issued
- restructuring legislation enacted

http://www.williamsenergy.com/energy_flash/ee/fram_ee.htm





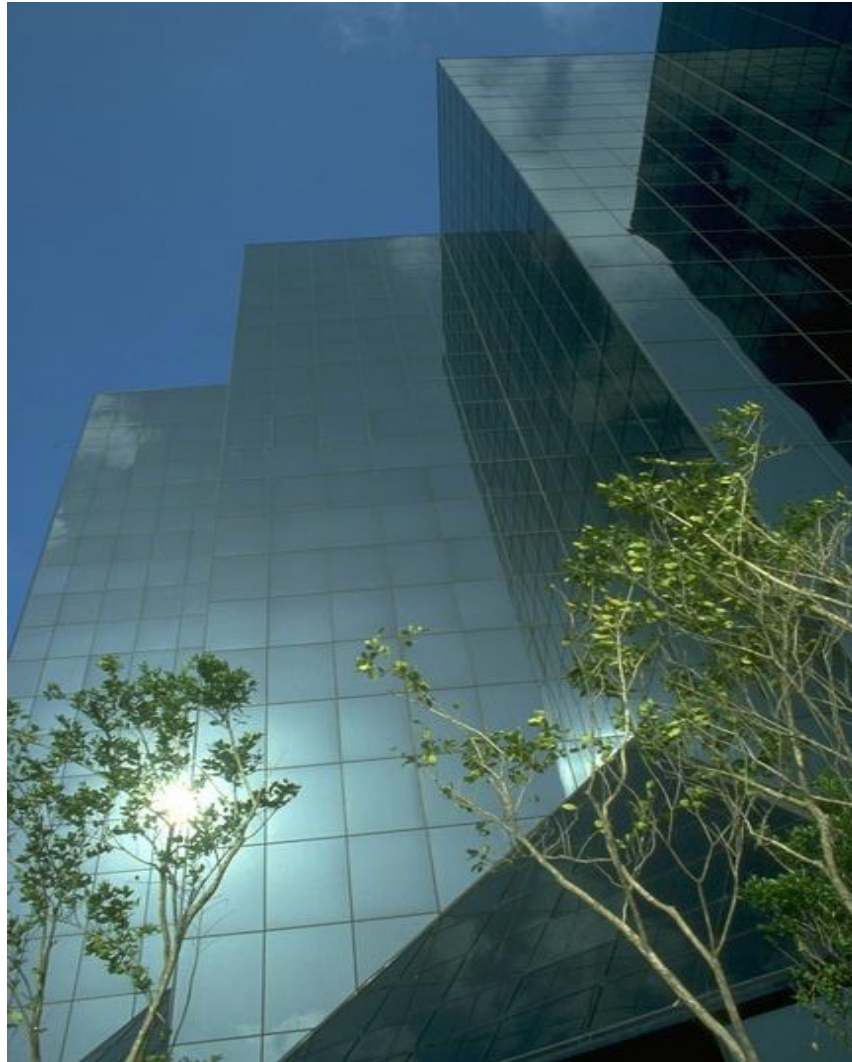
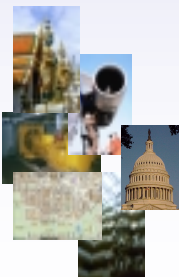
The Facility Management Tool-Kit

**Demand
Maintenance**

**Preventative
Maintenance**

**Asset
Management**

**Inventory
Management**



**Procurement/
Purchasing**

**Space
Management**

**Enterprise
Energy
Management**

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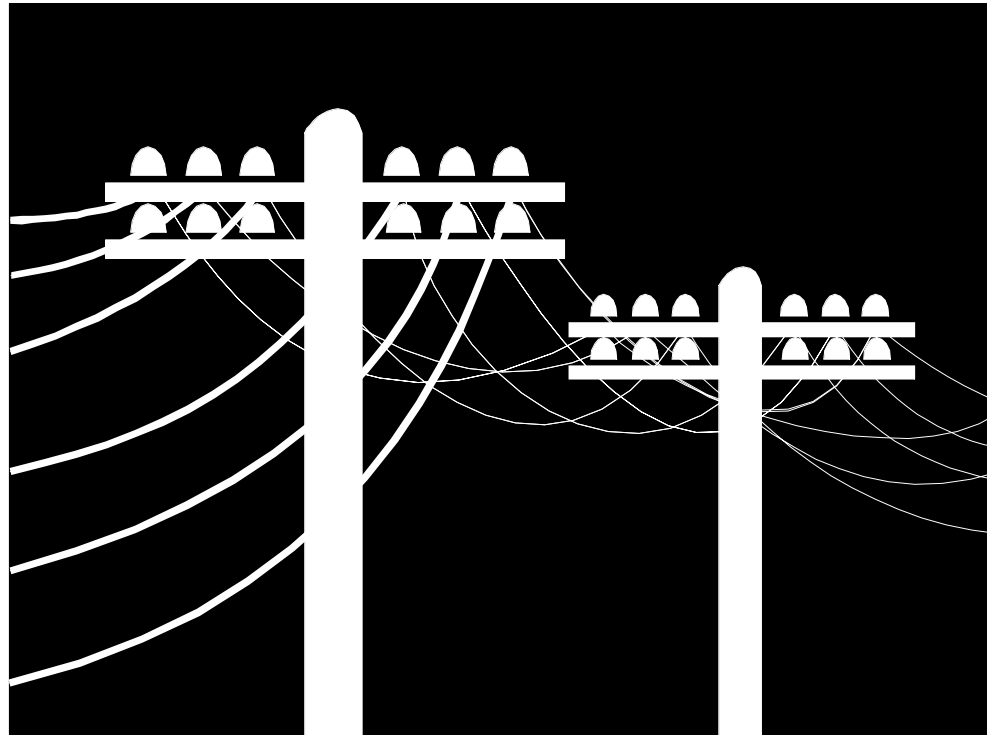
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Enterprise Energy Management (EEM)

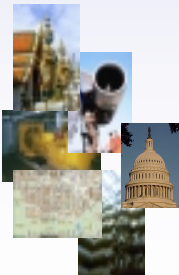
**Energy
Procurement**

**Facility
Operations**



**Energy
Cost
Management**

**Management/
Administration**



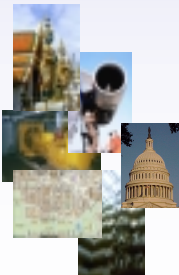
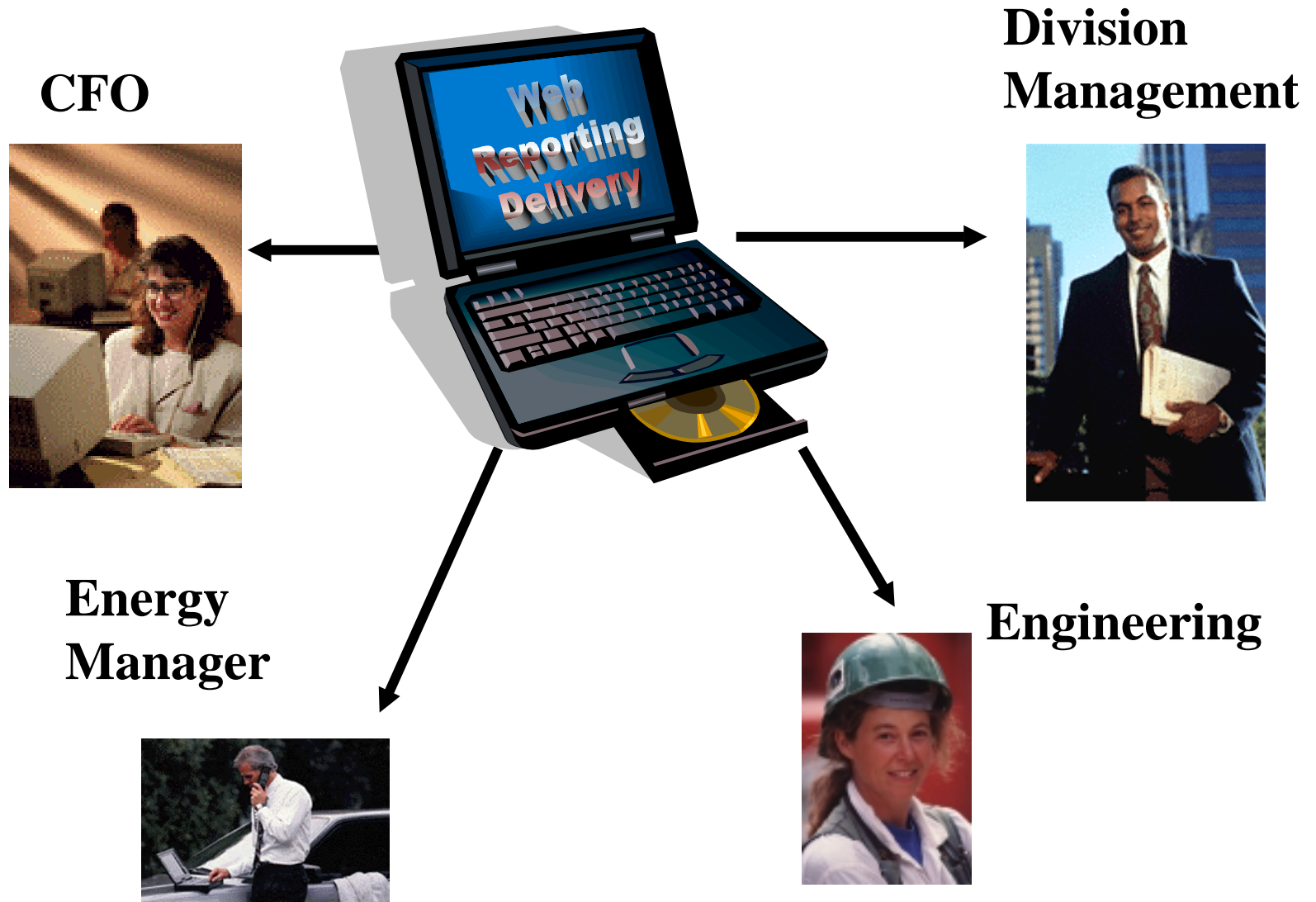
June 2000

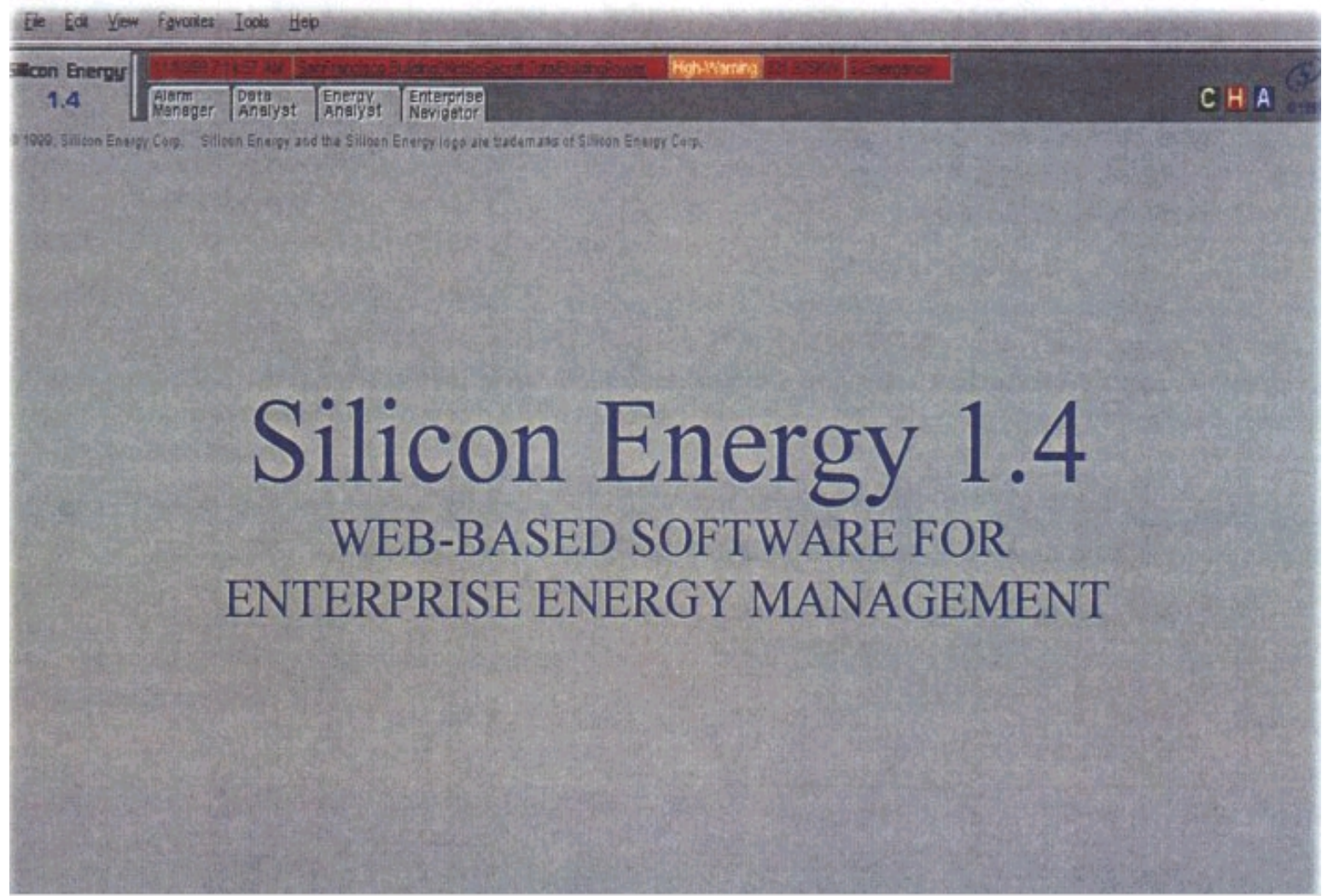
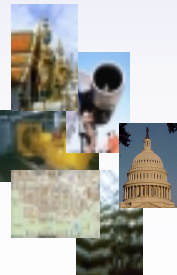
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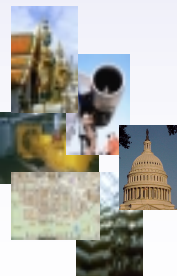
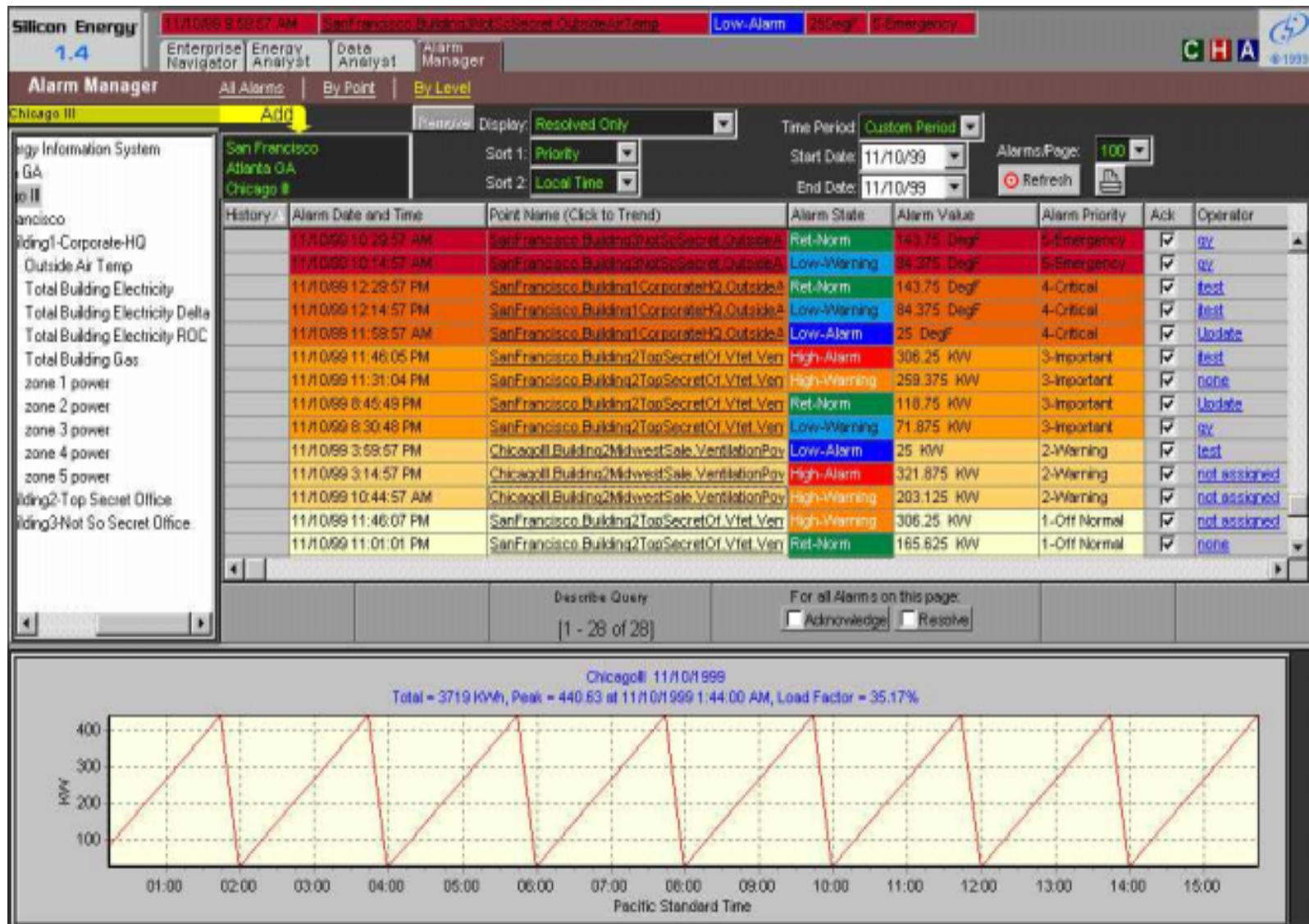
User Specific Reporting Capabilities







Alarm Manager



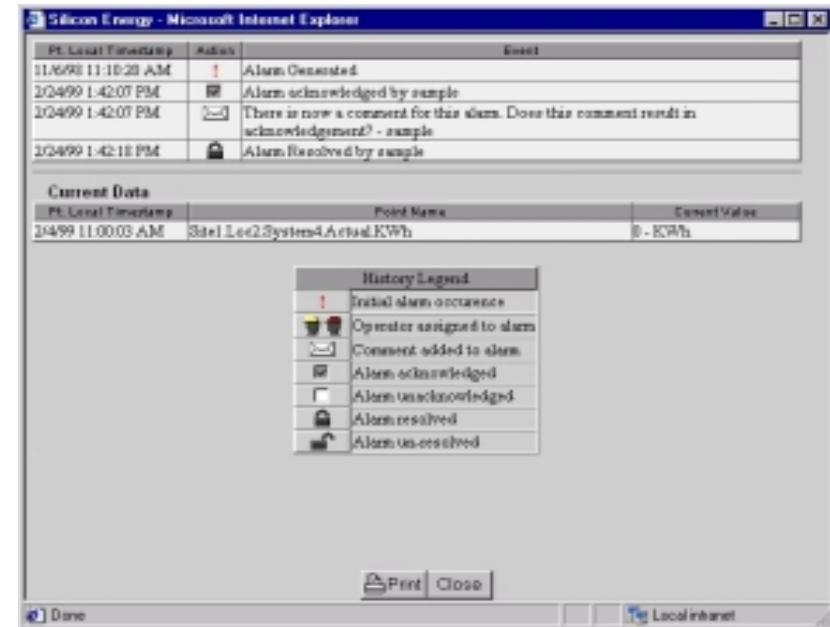
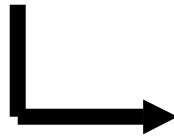
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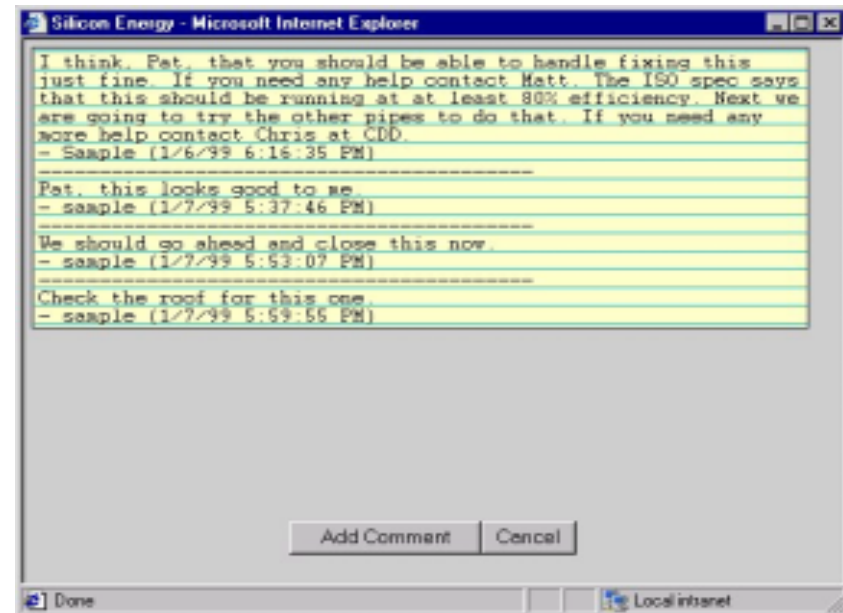
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Instant notification
via phone, fax, page,
cell or palm

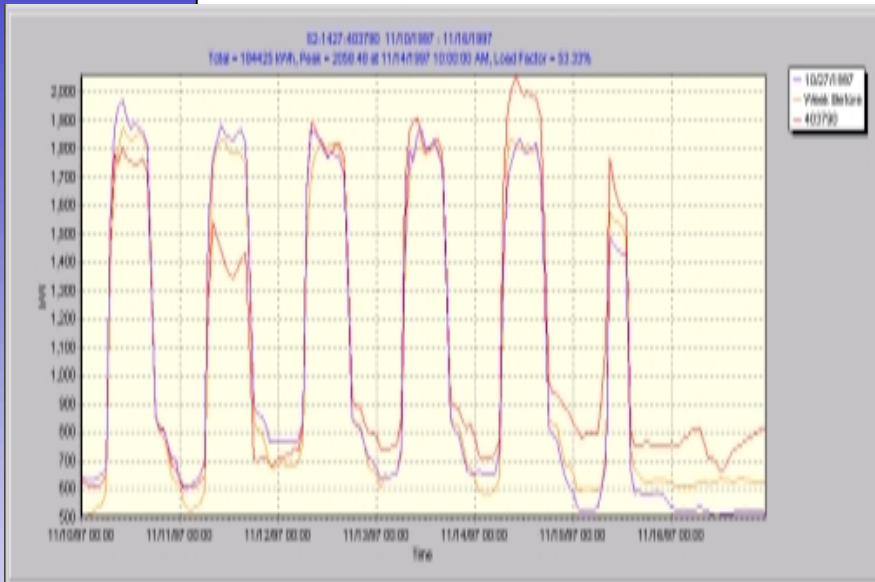


Alarm audit trail



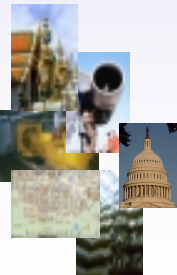


Data Analyst



Multi-Point Trend

- Comparison of previous week and day values
- Identify operating characteristics of equipment
- Data is archived for future analysis



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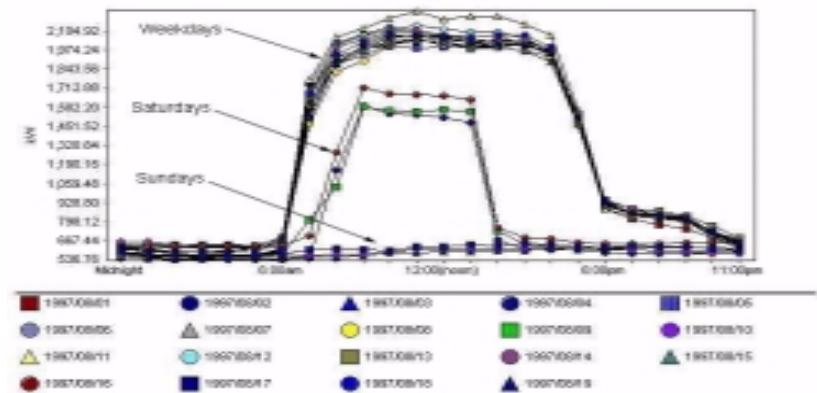
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24 Hour Line Plot

- Plotting temperatures, flows, pressures and energy demand
- Determine abnormal variations between weekend and weekday curves
- How large is the variation between the peak day values and the average weekday and weekend values?

24 Hr. Line Plot

52-1427-403790 Period: 8/1/97 to 8/19/97 Print Date: 8/30/98



	Value	Time
Minimum	536.76 kW	8/2/97 4:00:00 AM
Maximum	2235.6 kW	8/1/97 11:00:00 AM
Average	1093.37 kW	

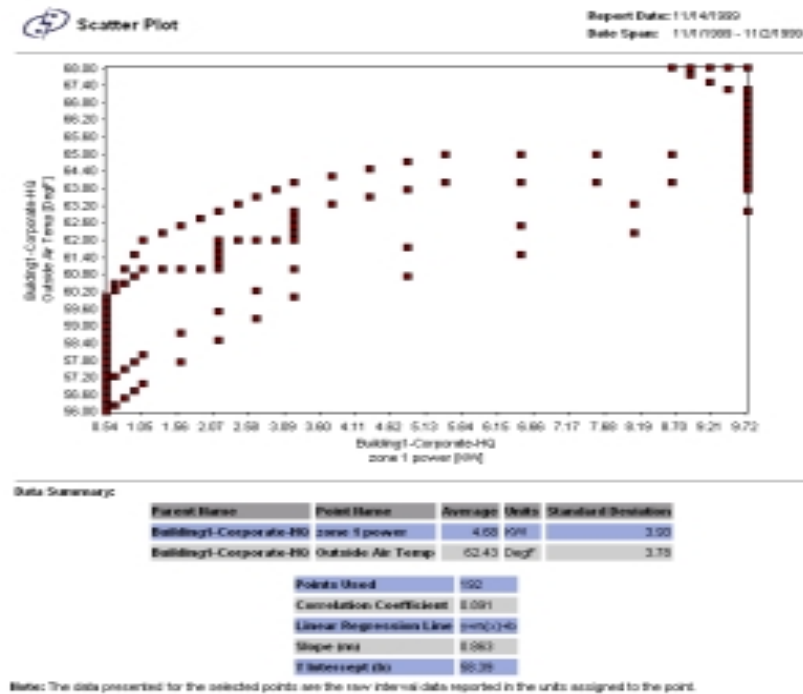
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XY Scatter Plot

- Chiller efficiency (KW/ton) vs. chiller cooling produced (tons)
- Investigate HVAC systems and component's operational efficiency and performance



Min, Max, Average Report

Report Date: 11/1/09
Date Span: 11/1/09 - 11/7/09

Data Summary:

Parent Name	Point Name	Maximum	Timestamp	Minimum	Timestamp	Average	Units
Demo site	heating gas	325156	11/1/09 5:00:00 AM	0	11/1/09 10:00:00 AM	72725.314	MMBtu
Demo site	dry bulb temperature	72	11/3/09 12:00:00 PM	53	11/1/09 5:00:00 AM	61.290	Degrees F
Demo site	global solar	207	11/2/09 11:00:00 AM	0	11/1/09 12:00:00 AM	44.256	BTU/SqFt
Demo site	lighting electricity	75.7	11/1/09 12:00:00 PM	10.9	11/1/09 12:00:00 AM	35.723	KWH
Demo site	atmospheric pressure	30.1	11/1/09 12:00:00 AM	29.8	11/3/09 3:00:00 AM	29.908	Cm
Demo site	equipment electricity	51	11/1/09 11:00:00 AM	7.6	11/1/09 12:00:00 AM	22.258	KWH
Demo site	cooling electricity	51	11/3/09 2:00:00 PM	0	11/1/09 12:00:00 AM	6.196	KWH
Demo site	auxiliary electricity	0	11/1/09 12:00:00 AM	0	11/1/09 12:00:00 AM	0	KWH
Demo site	heating electricity	0	11/1/09 12:00:00 AM	0	11/1/09 12:00:00 AM	0	KWH

Note: The data presented for the selected points is the minimum, maximum, and average values for the raw interval data and is reported in the units assigned to the point. For example, for a point with units of KWH and an archive interval of 15 minutes, the report will return the maximum 15 minute interval value not the maximum hourly KWH value.

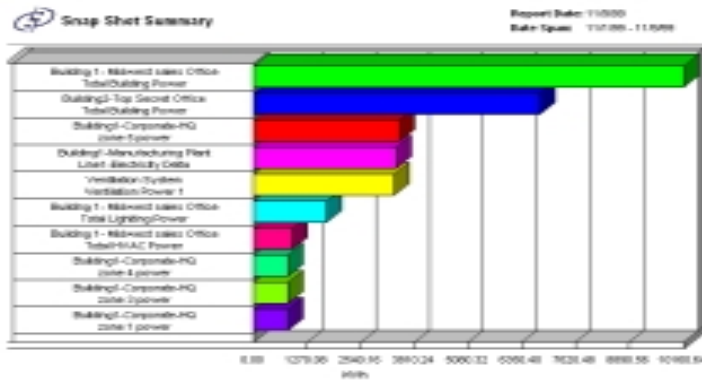
Min Max Average

- Timestamp for when the maximum and minimum values occurred
- Manage zone temperatures





Energy Analyst



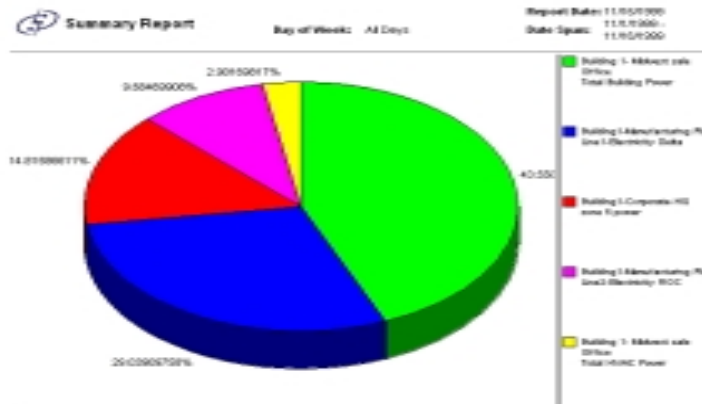
Snap Shot Summary

- Display total commodity consumption by facility`

Data Summary

Facility Name	Facility Name	Total	Units
Building 1 - Midwest sales Office	Total Building Power	10,000.00	kWh
Building 2 - Top Secret Office	Total Building Power	10,000.00	kWh
Building 1 - Corporate HQ	Zone 1 power	3,400.00	kWh
Building 1 - Manufacturing Plant	Line 1 Electricity Delta	3,000.00	kWh
Ventilation System	Ventilation Power 1	1,000.00	kWh
Building 1 - Midwest sales Office	Total Lighting Power	1,000.00	kWh
Building 1 - Midwest sales Office	Total HVAC Power	1,000.00	kWh
Building 1 - Corporate HQ	Zone 1 power	1,000.00	kWh
Building 1 - Corporate HQ	Zone 2 power	1,000.00	kWh
Building 1 - Corporate HQ	Zone 1 power	1,000.00	kWh

Notes: Data from points with consumption per time units (e.g. kWh/therms/cu. ft./gallons/hr) are converted to consumption rate using a time integrated method. Consumption totals for these points represent a time integrated estimate of actual consumption.



Summary Report

- How do my sites rank on an energy consumption per square foot basis over a monthly or yearly basis?

Data Summary

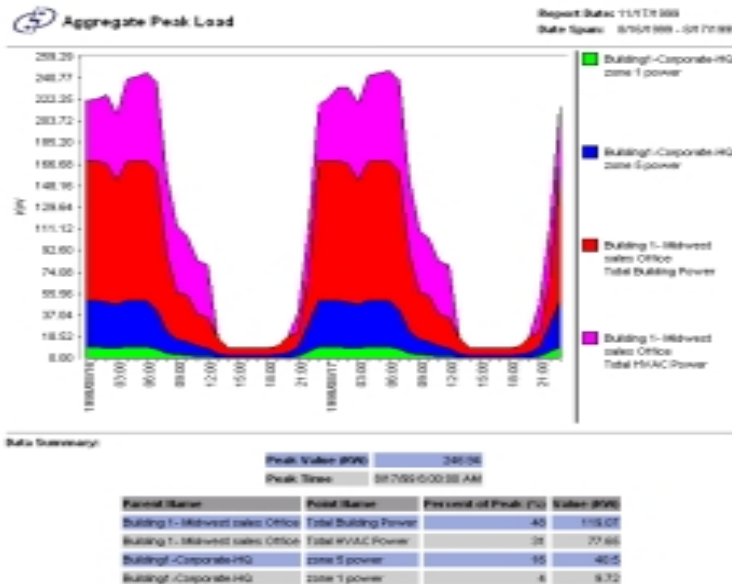
Facility Name	Facility Name	Total	Units
Building 1 - Midwest sales Office	Total Building Power	10,000.00	kWh
Building 1 - Manufacturing Plant	Line 1 Electricity Delta	3,000.00	kWh
Building 1 - Corporate HQ	Zone 1 power	3,400.00	kWh
Building 1 - Manufacturing Plant	Line 2 Electricity ROC	1,200.00	kWh
Building 1 - Midwest sales Office	Total HVAC Power	1,000.00	kWh

Notes: Data from points with consumption per time units (e.g. kWh/therms/cu. ft./gallons/hr) are converted to consumption rate using a time integrated method. Consumption totals for these points represent a time integrated estimate of actual consumption.

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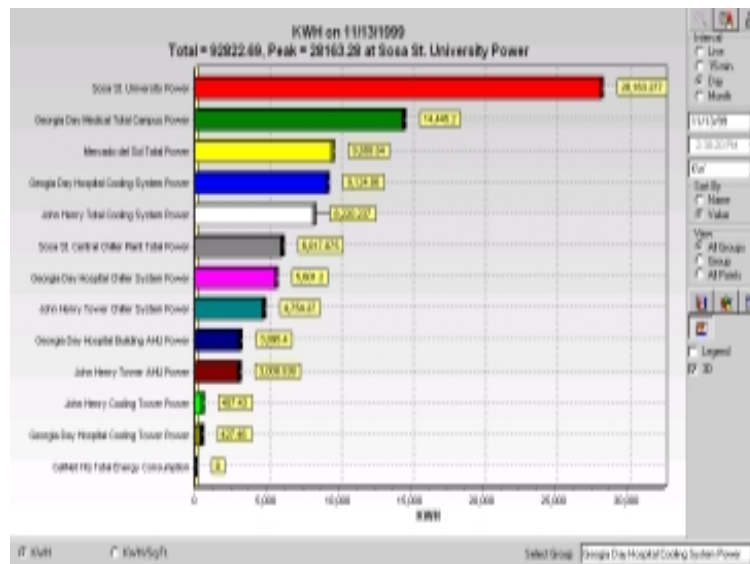
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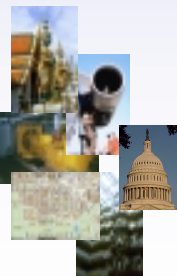
Aggregate Peak Load

- What facilities are contributing to expensive utility peak demand charges?
- Which tenants are contributing the most to the building's total electric peak? (Charge accordingly)



Enterprise View

- Real-time demand levels
- How do my sites rank in terms of energy and demand intensity levels?



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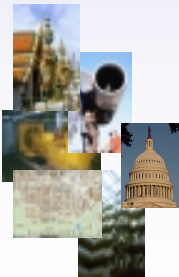


Utility Accountant 1.4

Data Entry Reports

Bills and Exception Reports

Analysis Reports





Bill Entry

UA - Bill Entry 5:13:27pm S W R B C

File Help

Customer: **Cyberwire** Meter: **M111** Search

Period Start Date: **Dec 14, 1999** End Date: **Jan 14, 2000**

Bill Issue Date: Due Date:

Accounting Year: **1999** Month: **12** Days: **32**

Usage: **35** KWH Avg \$/Day: **\$2.09** Avg Rate: **\$1.9143**

Current Cost: **\$67.00** ☐ Estimated Bill

Prev Balance: **\$0.00** Taxes: **\$0.00**

Credits: **\$0.00** Others: **\$0.00**

Late Payment Fee: **\$0.00** Total Due: **\$67.00**

Total Override: ☐

Account Number: **New1234**

Address: **ABC 123 North St.**
Suite 5000
Infospace AR

Cost Center: **Middle West**

G/L Code: **E0354** Status: **Inactive**

Utility Provider: **COUNTRY OIL**

Provider Meter #: **cb00111**

Vendor Nbr: Schedule:

Comments: **Tagged** ☒

Meter Notes: **This is a new meter as of 8/95**

AcctPeriod	From	To	Days	Usage	Demand	Cost	Avg \$/Day	Avg Rate	Total \$	Tag	Est...
1999/12	12/2/99	12/13/99	12	143		276.00	23.00	1.9301	276.00		
1999/12	12/14/99	1/14/00	32	35		67.00	2.09	1.9143	67.00	Y	
1999/11	11/1/99	11/14/99	14	25356		5,677.00	405.50	0.2239	5,677.00		
1999/11	11/15/99	12/1/99	17	178		34.00	2.00	0.191	34.00		
1999/10	10/1/99	10/10/99	10	4789		1,143.00	114.30	0.2387	1,143.00		
1999/10	10/9/99	10/19/99	11	254		87.00	7.91	0.3425	87.00		
1999/10	10/14/99	10/31/99	18	2534		500.00	27.78	0.1973	500.00		
1999/09	9/1/99	9/30/99	30	52424		13,423.00	447.43	0.256	13,423.00		
1999/08	8/1/99	8/31/99	31	8900		687.00	22.16	0.0772	687.00		
1999/07	7/1/99	7/14/99	14	36000		2,567.00	183.36	0.0713	2,567.00		
1999/07	7/15/99	7/31/99	17	35467		3,754.00	220.82	0.1058	3,754.00		
1999/06	6/1/99	6/30/99	30	35000		7,890.00	263.00	0.2254	7,890.00		
1999/05	5/1/99	5/31/99	31	20000		4,456.00	143.74	0.2228	4,456.00		

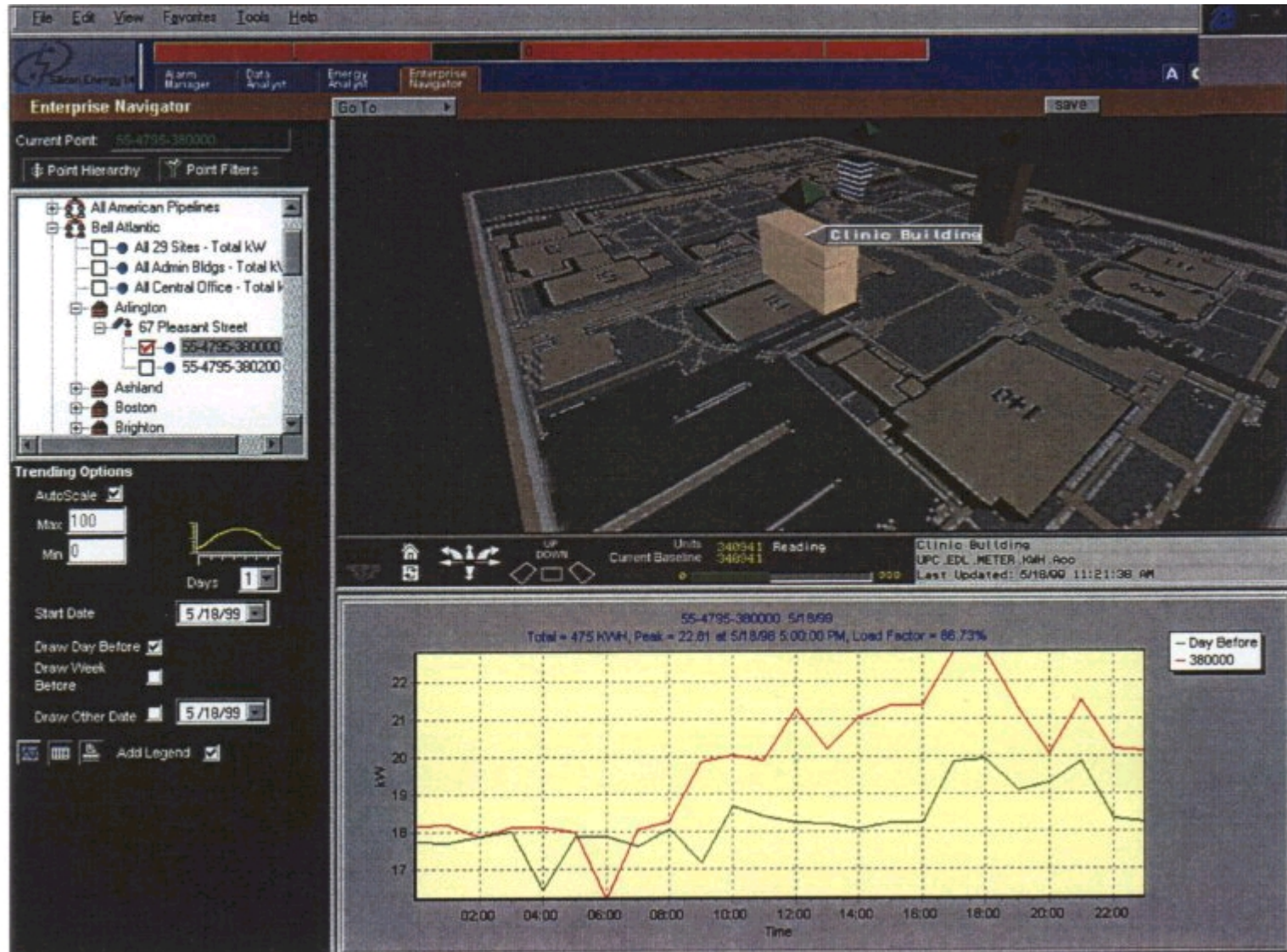
10/22/99 5:13 PM

13 Months Grid Lines

Delete New Save Close



Enterprise Navigator



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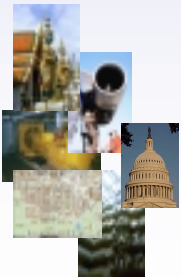
FM

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FM is a Business

- Maintenance is not an Option



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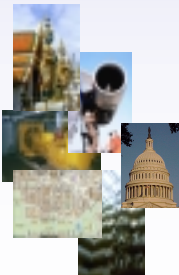
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Facilities Management

- FM is a business
 - It has internal customers - the business it supports
 - It has external Suppliers of Services - Outsourcing, Purchasing
 - It has external Customers - leasing of space





Internal Customers

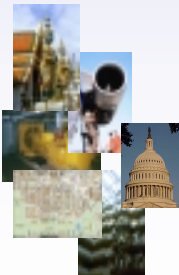
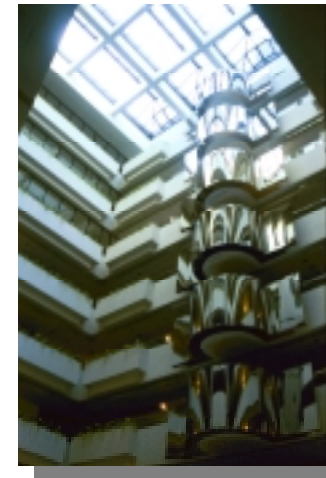
- FM has its own internal customers to take care of..
 - Concierge services
 - Employee Self Service





External Services

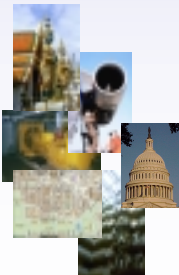
- FM has a need for the B2B
 - FM purchases many items - much can be done online
 - FM can have Vendors Bid for services
 - Resulting in a more cost efficient business
 - E-Procurement
 - Bidcom
 - E-furn
 - Get IT
 - MRO - PSDI





Impact on FM

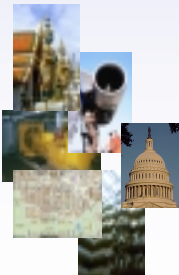
- Flexible Space
- Hoteling
- Project rooms - GSA Project room
- Move to a Digital office
- Access to Digital files
 - Paperless office - tools and technology arriving
 - Digital - Wireless - results in freedom from the desk
- FM will have to respond and redesign space to accommodate changes brought about by E-commerce





Relevant Opportunities

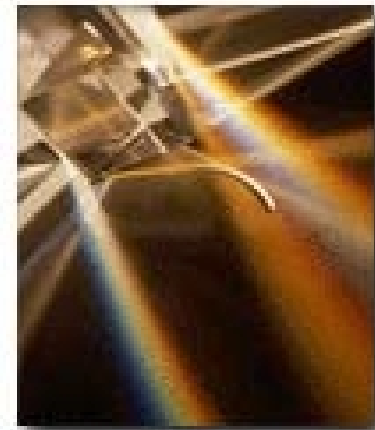
- GET IT
- Maintenance Repair Operating (MRO)
- ASP Model
- E-Furn
- Collaborative Web
- Facilities Portals
- E-Procurement
- Employee Self Service
- Auctions
- Bidding
- Energy Management
- Event Management





Technology Issues

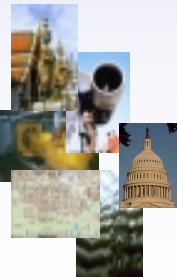
- Bandwidth
- Organization of Information
- Workflow - online approvals
- Security
- Training
- Implementation
- Stability of Vendors
- Fast pace of change
- Standards





Integration

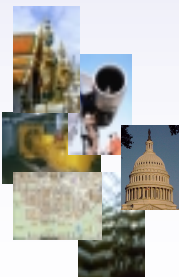
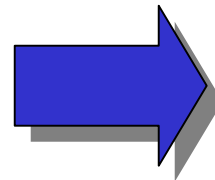
- Redefining the role of the FM
- Business Process Re-Engineering
- Information Standards
- Facilities Standards - Space, Workstations
- External Standards matching Internal
- Change management
- Increased Visibility
- Faster Pace of change
- Increased Customer Satisfaction





Why will change come?

- Expansion of the Internet
 - Presents new opportunities to tackle old problems
 - Traffic congestion
 - Telecommuting
 - Changes in the Geography
 - Business Model is changing



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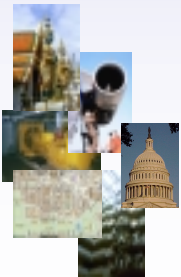
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Evolution

- Receptionist
- Voice Mail
- Email
- E-Procurement
- B2B



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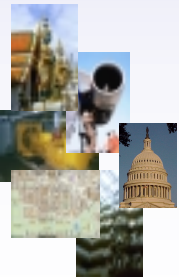
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Impact

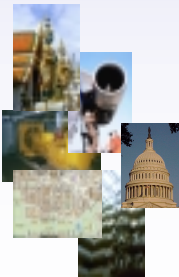
- Information
 - You have to organize your information to take advantage of the external opportunities and offer the internal opportunities
 - Detailed inventory of what you have!





Architectural Impact

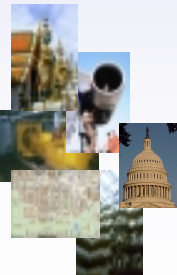
- Moving at the speed of Light
- Urban model changes
- Moving from a Car orientated to an Information orientated
- Technology is changing the distances
- Still will be a separation of home and work
- Need for social and Creative Interaction
- More Flexible Environment





Old Versus New

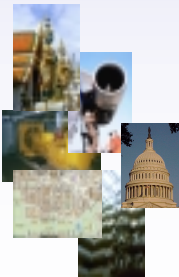
- Arrange Meeting
 - Drive to Office
 - Park
 - Review drawings
 - Select what is required
 - Copy files to media
 - Drive
 - Park
 - Unload drawings from media
- Access Project Web Site.
 - Review latest updates
 - Download what is required





Future

- These are the first generation of Internet tools
- Increases in bandwidth provides new opportunities to communicate





What is an Employee Self Service Solution?

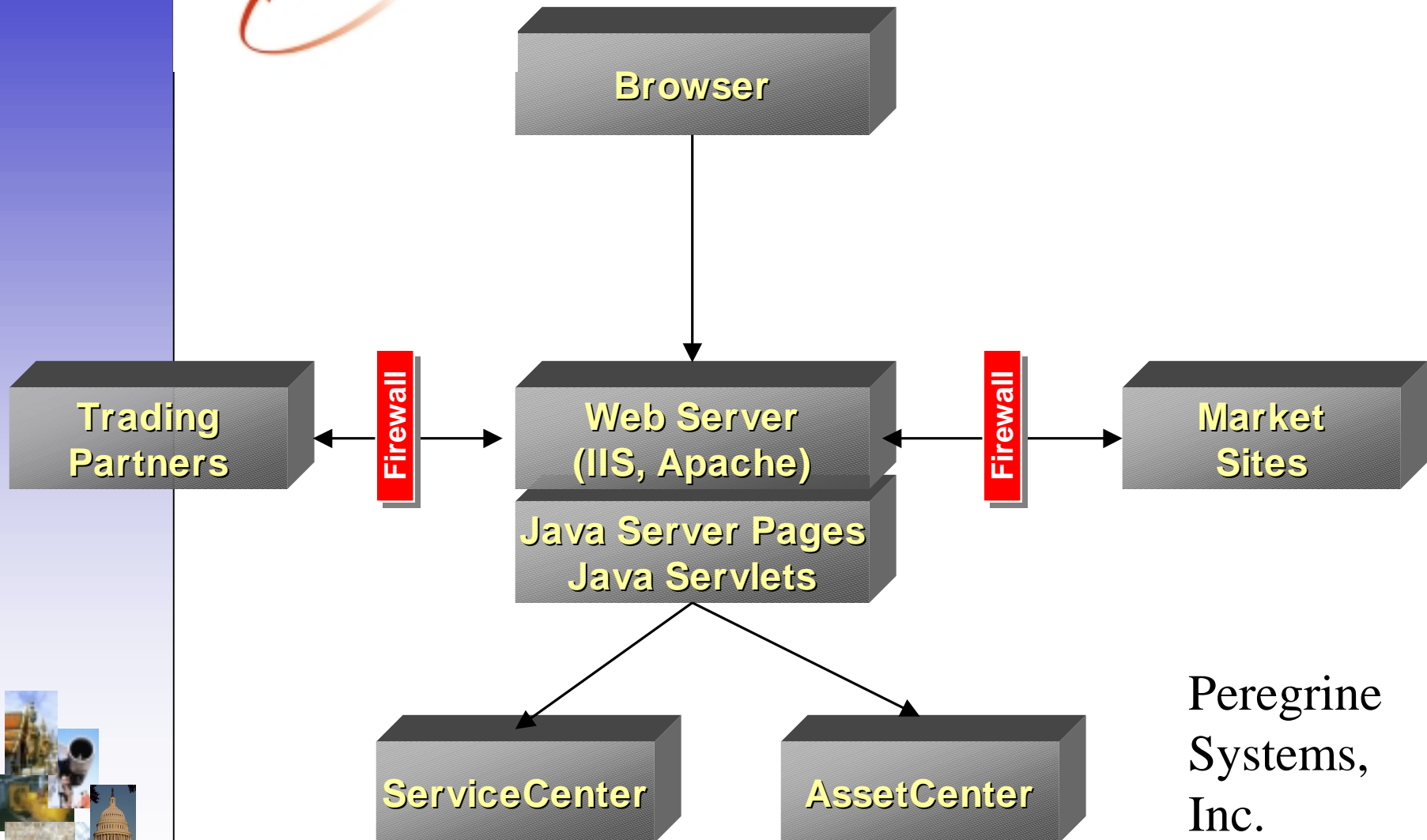
- Makes a tedious, unproductive process easy and simple.
- Empowers the employee to get their job done better, faster, cheaper.
- Saves time and money by simplifying the process for the employee, while leveraging all appropriate organizational activity





Get. It!

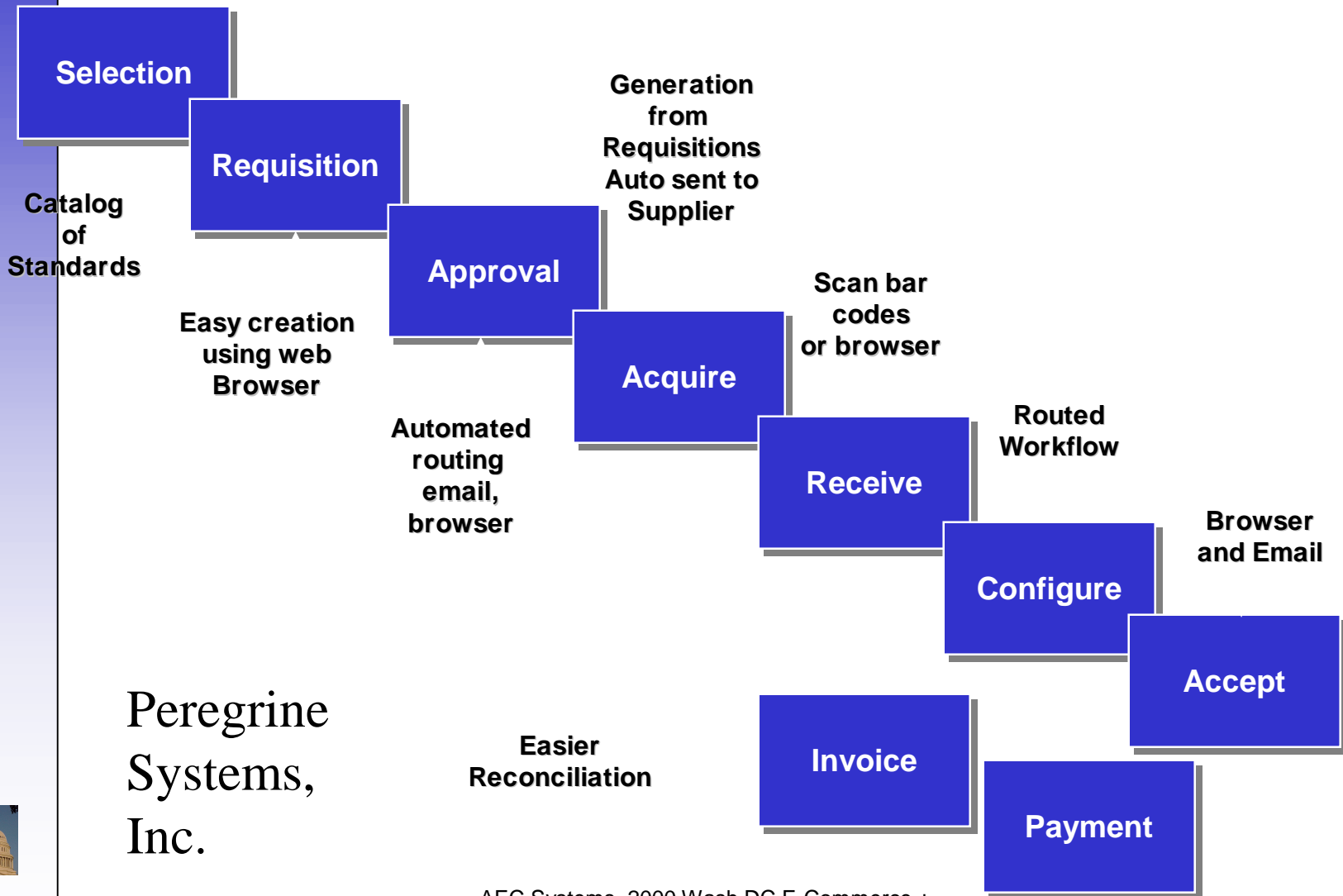
- Architecture



Peregrine
Systems,
Inc.



Automation - The Value Proposition



Peregrine
Systems,
Inc.

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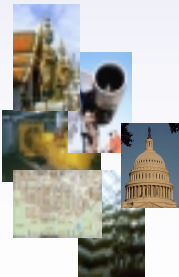
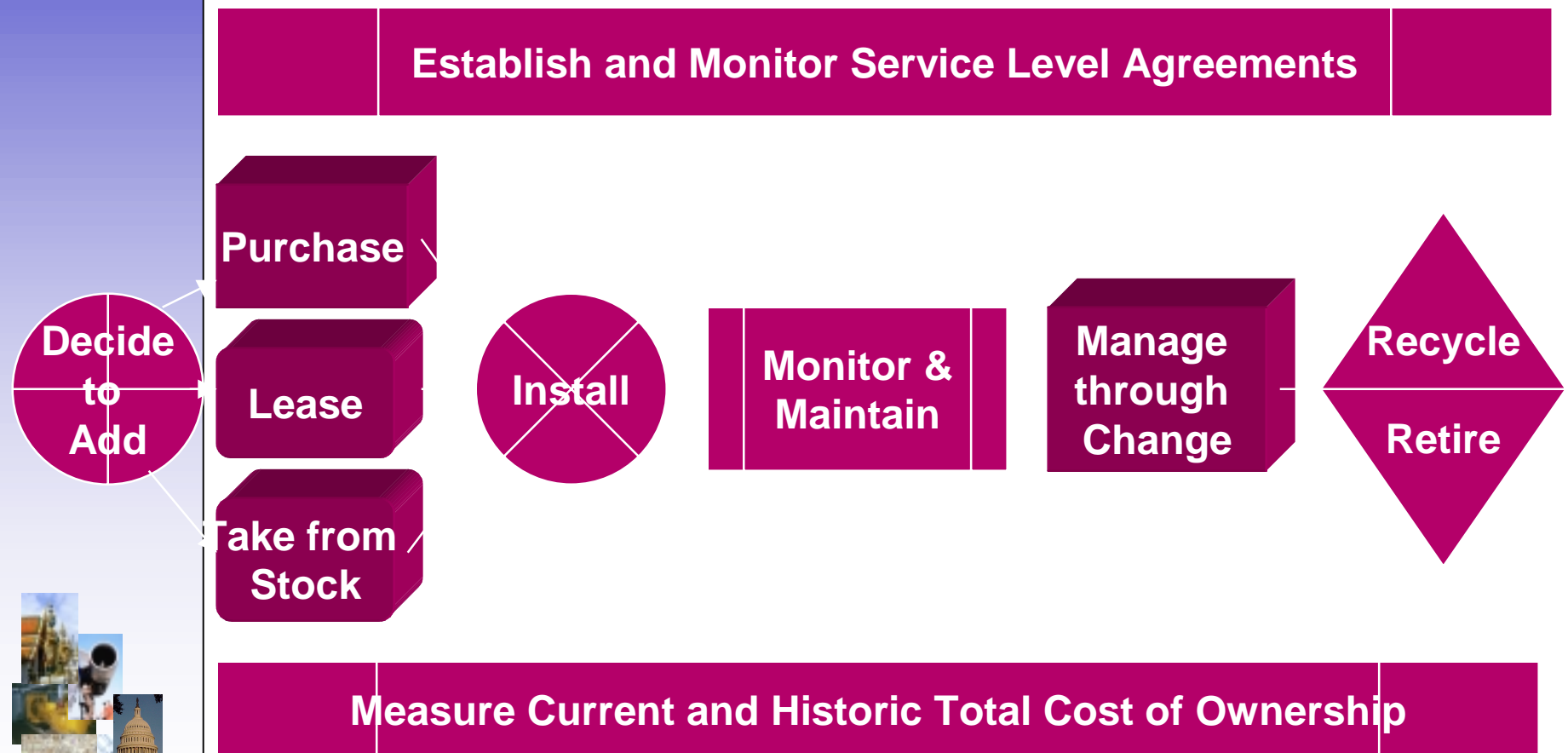
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Get. Resources is the beginning of Infrastructure Life-Cycle Management

Peregrine
Systems, Inc.





Get.Resources is the beginning of Infrastructure Life-Cycle Management

Peregrine
Systems, Inc.

Establish and Monitor Service Level Agreements

Get.Resources! (TM)

Install

**Monitor &
Maintain**

**Manage
through
Change**

**Recycle
Retire**

Measure Current and Historic Total Cost of Ownership



Catalog and Market Providers



COMPAQ

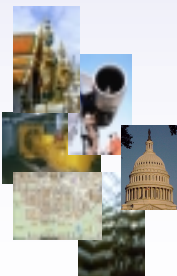
**Office
DEPOT**



Peregrine
Systems, Inc.



inacom
Running is everything.™



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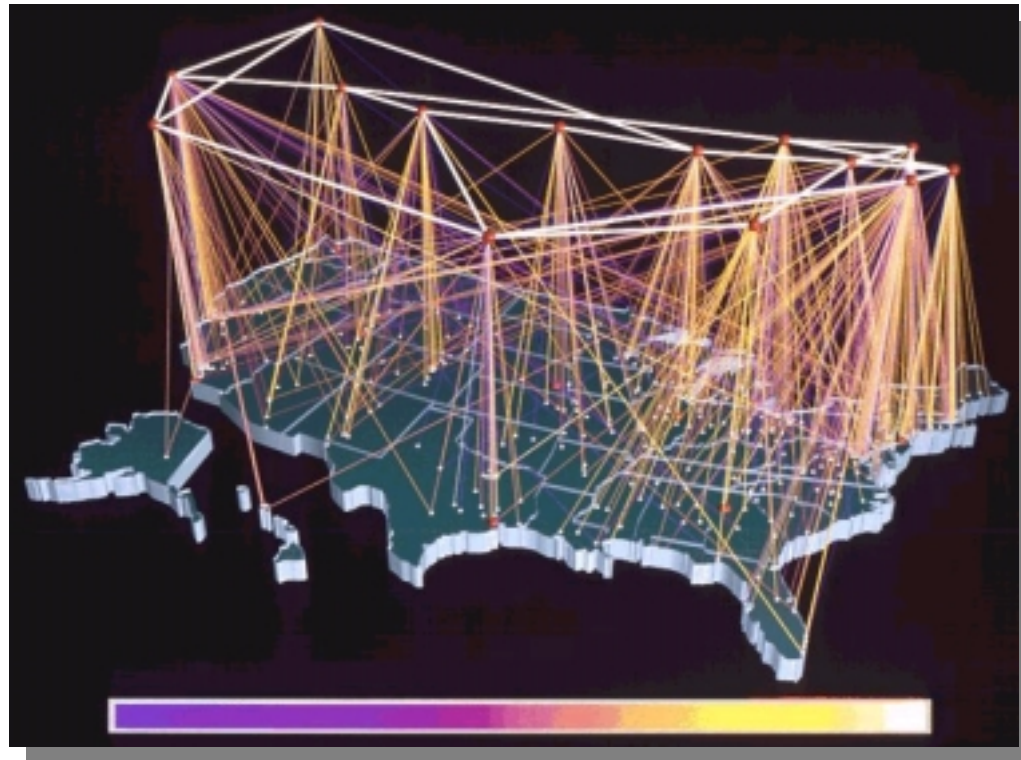
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The End or the Beginning?

- Questions & some answers!



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